Credit
Research
Center

WORKING PAPER NO. 54

Shopping For Consumer Credit: Implications For Market Efficiency

1987

Krannert Graduate School of Management – Purdue University

SHOPPING FOR CONSUMER CREDIT:
IMPLICATIONS FOR MARKET EFFICIENCY

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Abstract

One function of the Truth in Lending Act was to promote consumer shopping for credit by providing standardized disclosure of terms. A product of this shopping behavior, and the resulting competition among creditors, should be that borrowers of similar default risk would pay the same price for credit, holding other terms of the credit contract constant. In other words, the market for consumer credit would be allocationally efficient.

The purpose of this study is to provide evidence regarding the credit shopping behavior of consumers and its implications for market efficiency and public policy. The characteristics of shoppers and nonshoppers are compared, as well as the type of creditors they choose. The results indicate that, for some consumers, current developments in credit markets, including the Tax Reform Act of 1986, should increase the expected net

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benefits of credit shopping and, thus, its incidence. Evidence of consumers' sensitivity to the incentive compaigns of auto finance companies and their insensitivity toward credit card interest rates is provided. Finally, it is concluded that regulations requiring full disclosure of credit terms and encouraging price competition among creditors for all risk classes of borrowers, as well as education of these borrowers about available alternatives, appear to be the optimal public policy to promote consumer credit market efficiency.

SHOPPING FOR CONSUMER CREDIT: IMPLICATIONS FOR MARKET EFFICIENCY

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I. Introduction

In a perfectly efficient financial market the price of a financial contract is a function of its risk. According to classical theory, this situation prevails when buyers have equal access to complete and costless information about the costs and benefits of competing contracts from a variety of sellers.

There are many barriers which potentially contribute to (price) inefficiency in the market for consumer credit. The first is that the market is generally local in nature so that the price for credit may vary across borrowers because of differences in local market competition. The second is that information reflecting the credit risk of the borrower may be proprietary or incomplete. Finally, the complete array of terms for credit contracts is so complex and varied that the consumer may not be able to shop effectively for credit.

Technological advances and deregulation are setting the stage for improvements in the price efficiency of the consumer credit market by diminishing the first two barriers. Technology has reduced the cost of obtaining information about borrowers' credit risk. It has also widened consumer choice with a variety of new products and services provided in a national market. By increasing inter- and intrastate competition among creditors, deregulation has facilitated the transfer of funds from areas of

excess supply to areas of excess demand. Further, deregulation of interest rates on deposit and credit products permits more explicit pricing of consumer credit.

One function of the Truth in Lending Act (1968), legislation which provides for standardized disclosure of terms so that consumers can compare the price of various consumer credit contracts, was to diminish the third barrier to market efficiency. A reduction in the dispersion of interest rates quoted to a given individual for homogeneous contracts should follow from legislation which encourages comparison shopping for consumer credit. In other words, borrowers of similar credit risk would be charged the same interest rate, holding other terms of the contract constant.

Although market efficiency is dependent upon the existence of a variety of sellers, unregulated prices, and available information--consumers' shopping behavior is a key variable in the equation. Since they differ in the value derived from it, not all consumers comparison shop. In his classic work on the economics of search, Stigler (1961) proposed that buyers seek information about alternatives in the marketplace only to the point when the additional costs of doing so equal the additional benefits. Since perceived costs and benefits vary across buyers, some will engage in more search activity and be more informed about available prices than others. The existence of less informed buyers allows some sellers to charge higher prices; in other words, it adds to the level of price dispersion and market inefficiency.

To the extent that less informed consumers are not paying the lowest price for credit, given their credit risk, the credit market may be

perceived as "unfair." Although variation in consumer shopping behavior is due to personal differences in perceived costs and benefits, the extent to which shopping for credit is discouraged by discriminatory credit screening practices, incomplete information, or inadequate competition is a matter of public policy.

The purpose of this study is to provide empirical evidence of the credit shopping behavior of consumers and its implications for the efficiency of the consumer credit market and for public policy. The data analyzed were collected in a survey of a national sample of households. The financial and socioeconomic characteristics of consumers who shopped before committing to a credit agreement are compared with those who did not. The source of credit is examined in conjunction with whether a borrower sought information on credit terms. Shopping behavior and credit source are also compared across geographic regions, examining regulatory effects with respect to competition and usury ceilings.

Deregulation and technological advances, as well as more complete and standardized disclosure of credit terms, has promoted the efficiency of the consumer credit market. However, the complexity of the credit product, high costs of shopping, and/or low perceived benefits are reflected in a low incidence of comparison shopping for credit among borrowers. This is particularly true for low income households, for individuals who perceive they have high default risk, for borrowers with established relationships at creditors, and for persons needing small amounts of credit.

The implication of these results, from a public policy viewpoint, is that an effective campaign against reregulation of credit interest rates and barriers to competition must contain components which facilitate the credit shopping behavior of all borrowers. As yet, the very consumers who could potentially benefit the most from deregulation may not have realized those gains because of credit search practices which were learned in a regulated, local market environment.

II. Literature Review

Stigler (1961) formulated several propositions about individuals' search behavior. One of these was that the extent to which consumers comparison shop among alternatives increased as the cost of doing so declined, holding all other things constant. Thus, theoretically, the standardized disclosure of credit terms legislated by Truth in Lending should increase the amount of shopping for consumer credit.

Since Truth in Lending was implemented in July 1969, several studies have investigated its effectiveness by examining the credit shopping behavior of consumers. Day and Brandt (1973) believed that the credit decision should be considered in the context of the purchase decision. Their study began with an analysis of purchase planning and continued with the amount of store (or dealer) shopping, brand (or model) consideration, and product information seeking through media advertising, friends,

salesmen, etc. Finally, they evaluated the amount of credit information consumers sought and the number of alternative credit sources considered.[1]

Day and Brandt's analysis indicated that the majority of consumers in their sample were deliberate in making purchase decisions, with 82 percent planning the purchase for several weeks or more. Although search for product information through sources such as media advertising, Consumer Reports or friends was minor (50 percent used only one source), about 75 percent of the consumers shopped at more than one store (or dealer) or considered more than one brand of product. A large group of consumers (25 percent of the sample) sought no product information and shopped only one brand and store.

Analysis of the determinants of the amount of store shopping indicated that consumers who had prior experience with a retailer shopped at significantly fewer stores for the purchase of a household durable. In contrast, prior experience did not influence the number of dealers shopped for a car purchase. Those consumers who were interested in finding the best price shopped more extensively for both household durables and cars. Whether or not they used credit for the purchase did not influence the amount of product shopping.

Consumers in the Day and Brandt sample expended less energy for the credit decision than they did for the purchase decision. Of those who

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[1]The data for the Day and Brandt study were taken from a sample of California households in 1970. In order to examine the alleged credit problems of minorities, 150 black households were interviewed in addition to a randomly selected sample of 650. Potential bias should be considered when extending the findings of the study to the national population.

financed their purchases with credit, only 27 percent sought information about credit sources and 20 percent considered alternative sources.[2] These percentages were higher for automobile purchases (which typically entail a larger amount of credit) and lower for household durables.

The Brandt-Day study also found evidence that Truth in Lending disclosure was of little use to the low-income and minority consumers in the sample because their access to credit was more limited. These survey respondents were more likely to borrow from retailers and finance companies than were higher-income households, and they relied more heavily on dealer-arranged credit. Further, low-income minority credit users were more pessimistic than other consumers about the willingness of other credit sources (commercial banks and credit unions) to lend to them.

Given their overall results, Day and Brandt concluded that consumers in general were aware that some sources and types of credit were more costly than others. But, given that the finance charge is only a small portion of the total purchase price of a product, most buyers would continue to allocate their time and effort to product-related decisions rather than to credit decisions.

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[2]The overall amount of search among credit sources may be understated because it only measured inter-type search, for example, retailers versus banks. Shopping within each type of credit source was not counted.

The next data on consumers' credit shopping behavior were collected in 1977.[3] Durkin and Elliehausen (1977) found that consumers' awareness of annual percentage rates (APRs) had increased since 1970, but credit shopping did not incr ase accordingly. Of those consumers who had $200 or more of closed-end instalment credit outstanding at institutional sources, only 25 percent had shopped at other creditors or obtained information about other credit terms. Multivariate analysis of the determinants of search activity was not performed, but the data indicated that the propensity to search for information about credit increased with consumers' education and income levels.

Durkin and Elliehausen determined that the selection of a type of creditor was based on perceived relative costs. But, once a particular creditor was known to be satisfactory, familiarity became the major determinant in future transactions.

Using data collected in 1979 across four local credit markets that differed significantly in their regulatory environment, Peterson and Black (1984) found that among respondents who had recently borrowed $200 or more, only 21 percent had comparison shopped for credit.[4] Multivariate analysis supported the proposition that search activity increased with perceived benefits. The propensity to credit shop increased with the size of the loan and potential interest savings. Consumers were less likely to shop if

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[3]The 1977 Consumer Credit Survey, Board of Governors of the Federal Reserve System.

[4]The 1979 National Science Foundation Consumer Credit Survey conducted by the Credit Research Center.

being comfortable with a creditor or quick turn around with little paperwork were the most important factors in obtaining credit. And, borrowers with previous experience at a creditor were less likely to search. A 10 percent usury ceiling was in force in one of the markets surveyed (Arkansas). Consumers in this restricted market were less likely to shop for credit terms, supporting the hypothesis that search decreased with price variability.

As mentioned above, Day and Brandt found that low-income minority borrowers used retailer and dealer arranged credit more frequently and made little use of credit information. Peterson and Black derived similar conclusions from their model. They asserted that the propensity to search and to borrow from conventional low-cost creditors (commercial banks and credit unions) decreased as consumers perceived a higher probability of default. The results of their analysis indicated that consumers with greater subjective default risk, measured by income and loan rejection experience, were significantly more likely to have borrowed from higher-cost credit sources (defined as retailers, dealers and finance companies). And, those with high income were more likely to search.

An inverse correlation between credit shopping and default risk has also been suggested in an analysis of households in financial distress. In an investigation of those factors that determine a households' ability to meet debt repayment commitments, Dessart and Kuylen (1986) found evidence that the decision-making behavior of households with more than one loan outstanding influenced the likelihood of getting into financial distress. Financial difficulty was encountered more frequently among borrowers (with

multiple consumer debts) who had not considered alternative credit sources and forms of credit than among those who had. Further, borrowers who did not consider the terms of the contract and interest rate to be important were more likely to have trouble repaying debt commitments. The implication is that multiple debt contracts which are taken on "casually" may be a leading cause of financial distress.

One other recent study examined the economics of consumer search. Joel Urbany's (1986) research is based on experimental data collected to test several of Stigler's propositions of search theory: 1) expected benefits from search (and so the extent of search) are positively related to the dispersion in prices of the commodity, and 2) the extent of search is negatively related to its cost, holding all other things constant. Urbany asserts that Stigler assumes that buyers have only some abstract notion of the range and distribution of prices, and are ignorant as to which sellers offer various prices. But, once this assumption is relaxed, the effect of prior information and experience on search behavior must be considered.

Urbany's experimental design involved consumer shopping behavior for the purchase of several major consumer products. Through use of personal computers, buyers simulated purchases, while Urbany manipulated price dispersion, search costs and uncertainty (prior knowledge). In each simulation, the objective of the search was to find a lower price.

In support of his conjecture, Urbany found that reduced costs increased search only when there was little price dispersion and consumers had little prior knowledge. Thus, he concludes that the factors which are

generally believed to affect search behavior--cost and benefits--may not be theoretically consistent in their impact if the consumer's prior experience and knowledge is not considered.

III. Survey Findings

A. The Data

The data for the study derive from a nationwide survey of 3,824 consumers conducted in the early half of 1983.[5] Of these consumers, 1,658 reported that they had made a purchase of $500 or more in the past twelve months, with 532 financing a portion of that purchase with a closed-end consumer loan.[6] The loan may have been paid off by the time of the survey, but since it had been recently initiated, most respondents should have been able to recall their behavior when the debt was incurred. To determine if the consumers had done any comparison shopping, they were asked, "Before you decided the way you would buy this (item), did you try to get any information about other creditors or credit terms?"

The source of the loan revealed further insight into the borrower's behavior. An individual who did not shop but borrowed from his credit

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[5] 1983 Survey of Consumer Finances, Board of Governors of the Federal Reserve System.

[6] Making the purchase with a credit card or line of credit, 231 respondents were not extensively questioned about their shopping behavior and so were excluded from the analysis. Many of these consumers may have used this "credit" as a convenient substitute for cash rather than as a loan, and so their motivations would be different than those of instalment borrowers.

union can be evaluated differently than the nonshopper who obtained financing from the retailer selling the product purchased. Respondents did not generally provide valid data on the annual percentage rate paid on their loans, so a method was employed to classify the credit source as either a "high-rate" or a "low-rate" creditor. Commercial banks, thrift institutions, and credit unions were classified as providers of low interest rate consumer credit, while finance and loan companies, stores, dealers, and contractors were included in the high interest rate category. Since auto finance companies were offering below market incentive rates on new purchases just prior to and during the time of the survey, consumers who had financed a new car from them during that period were classified as using "low-rate" creditors.[7] Consumers who had borrowed from unconventional sources (about 12 percent of the 532 borrowers), such as friends or relatives, doctors, or insurance companies, were not included in the analysis of credit source.

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[7] Incentive rates were only available on select models, and which consumers had purchased these could not be determined. Since only 11 percent of new auto loans were obtained from auto finance companies during the appropriate period (the fourth quarter of 1982 through the first quarter of 1983), overestimation of the incentive rate financing should be inconsequential. Also, the first incentive rate campaigns conducted in the summer of 1981 and in early 1982 were ignored because they did not offer steep discounts nor were they pervasive.

B. Credit Search Behavior

1. Incidence of Credit Search and Information Sought

In 1983, 29 percent of those questioned reported that they shopped before obtaining a closed-end loan--little increase over results of earlier studies. Nearly 80 percent of borrowers who shopped made comparisons of interest rates and finance charges and stated that the primary motivation for their search was to find a lower interest rate (Table 1). One-third of the shoppers were interested in other loan characteristics, while only 22 percent sought credit availability or a particular size of monthly payment. Lower income borrowers who shopped for credit did not indicate that they were more interested in credit availability or payment size than higher income households.

But credit shoppers, even those specifically seeking a lower interest rate, were not more likely to borrow from "low-rate" creditors than nonshoppers (Table 1). Consumers who shopped, but borrowed from a retailer, dealer or finance company, were not necessarily less creditworthy. Compared to others in the sample, these borrowers had higher incomes and education, held larger amounts of liquid assets, and rarely had been rejected for credit in the past. But they also had above average debt to income ratios, both for outstanding debt and monthly payments. When asked to state the most important factor on a credit contract, nearly 40 percent mentioned the monthly payment (another 40 percent mentioned interest charges). Thus, credit shopping for many of these borrowers meant

Table 1

Credit Source and Type of Information Sought

Those Who Borrowed From Low-Rate Creditors:

Overall sample	55%
Credit shoppers	54%
Nonshoppers	55%

Type of Information Sought by Shoppers:

Type of Information	Those Seeking[a] This Type	Those Who Borrowed From[b] Low-Rate Creditors
Interest rate and finance charges	78%	52%
Other loan characteristics (contract term, insurance, general credit terms, etc.)	31	51
Credit availability and payment size	22	57

[a]For the 138 borrowers who shopped for credit, the percent seeking each type of information. Because they were allowed two responses, percentages add to more than 100.

[b]For shoppers seeking each type of information, the percent who borrowed from a conventional "low-rate" credit source.

finding a monthly payment which they were comfortable with, not the lowest interest rate.

Although not all consumers comparison shop for credit, each must choose a creditor. Thirty-six percent of the sample of recent borrowers indicated that the interest rate or finance charge was the motivation behind choosing the type of creditor--for example, a commercial bank versus a retailer (Table 2). In selecting a particular creditor, prior experience was the motivation for nearly one-half of the respondents (Table 3).

Over 40 percent of those consumers who selected creditors by interest rate shopped for credit, but nearly two-thirds were served by low-rate creditors. And, although only about one-fourth of those consumers who selected a creditor because of previous experience shopped, three-fourths borrowed from a low-rate credit source. These results indicate that nonshoppers were not necessarily borrowing at high rates.

Classifying the sample according to various financial and socio-demographic characteristics provides further understanding of consumers' credit search behavior and the type of creditors serving different groups of borrowers. The results of basic univariate analyses are presented in Table 4. Given that many of the characteristics are highly correlated, multivariate analysis is also included in order to determine which factors were most directly linked with differences in search behavior.

Table 2

Reasons for Choice of Type of Creditor
(shopping behavior and credit source)

Reason	Those Who Selected Given Reason[a]	Those Who Shopped[b]	Those Who Borrowed From Low-Rate Creditors[c]
Interest rate paid	36%	44%	65%
Previous experience	37	22	74
Credit availability	12	35	44
Convenience	19	25	50
Reputation, safety of institution, friendly	4	25	60
Arranged by dealer	11	21	10
All others	10	33	40

[a]Percent of 471 borrowers who gave reasons. Because they were allowed two responses, percentages add to more than 100.

[b]For those respondents giving each reason, the percent who credit shopped.

[c]For those respondents giving each reason, the percent who had borrowed from a conventional "low-rate" credit source.

Table 3

Reasons for Choice of a Particular Creditor
(shopping behavior and credit source)

Reason	Those Who Selected Given Reason[a]	Those Who Shopped[b]	Those Who Borrowed From Low-Rate Creditors[c]
Interest rate paid	17%	43%	62%
Previous experience	47	25	76
Credit availability	8	31	54
Convenience	13	29	54
Reputation, safety of institution, friendly	6	26	44
Arranged by dealer	15	30	22
All others	9	32	28

[a]Percent of 462 borrowers who gave reasons. Because they were allowed two responses, percentages add to more than 100.

[b]For those respondents giving each reason, the percent who credit shopped.

[c]For those respondents giving each reason, the percent who had borrowed from a conventional "low-rate" credit source.

2. Univariate Analysis of Search Behavior

Consumers with more education and higher income were more likely to spend time shopping for consumer credit (Table 4). Higher levels of education and income--two characteristics that are highly positively correlated--could be associated with individuals whose time carried a high opportunity cost, implying that they would search less. But, the level of understanding of the marketplace and the perceived benefits of search could be positively correlated to education and income. As suggested in earlier studies, consumers with lower income (and often less human capital) may perceive that they would not be deemed creditworthy by a variety of creditors, and so could incur the additional search cost of embarrassment from rejection. A significantly greater proportion of the lowest income earners had been rejected for credit in the past. Thus, consumers with high income and education may perceive high opportunity costs but positive net benefits to search.

Young single people were the most likely to shop for credit. This propensity may be indicative of lower opportunity cost of time, lack of prior experience with creditors, or perceived higher benefits from search because no habits had been established in a more regulated market. Retired persons, and others aged 45 or over and not in the labor force, were significantly less likely to shop but were not significantly more likely to borrow from "high-rate" creditors. This behavior may be explained by established relationships with low-rate creditors, as over half of older borrowers had had prior experience with their creditor. Single parents, the majority of whom were women (90 percent), were not only less likely

Table 4

Characteristics of Consumers Who Shopped For Credit or Used Low-Rate Credit Sources

	Those Who[a] Shopped		Those Who Borrowed From[b] Low-Rate Creditors	
All Respondents	29%		55%	
Education of Household Head				
Some high school or less	16%		41%	
High school diploma	21		61	
Some college	30		59	
College degree or more	52	$\chi^2 = 41.1$*	51	$\chi^2 = 10.5$*
Life Cycle of Household Head				
Single, <45, no children	43%		53%	
Single parent, any age	12		26	
Married, <45	31		58	
≥45 and working	26		59	
≥45 and retired (or otherwise not in labor force)	19	$\chi^2 = 11.5$*	54	$\chi^2 = 14.4$*
Household Income Quintile				
Lowest	15%		41%	
Second	21		55	
Third	28		54	
Fourth	33		58	
Highest	35	$\chi^2 = 9.7$*	55	$\chi^2 = 3.4$
Liquid Asset Holdings				
$500 or less	22%		47%	
$501 - 999	21		53	
$1,000 - 4,999	32		59	
$5,000 or more	39	$\chi^2 = 11.2$*	58	$\chi^2 = 4.7$
Household Debt Burden				
Ratio of outstanding instalment debt to pre-tax income:				
less than 5%	19%		61%	
5 - 9%	24		56	
10 - 19%	30		58	
20 - 39%	30		50	
40% or more	46	$\chi^2 = 14.8$*	51	$\chi^2 = 3.0$

Table 4 (continued)

	Those Who[a] Shopped		Those Who Borrowed From[b] Low-Rate Creditors	
Amount Borrowed for This Loan				
less than $1,000	13%		36%	
$1,000 - 2,499	22		60	
$2,500 - 4,999	26		57	
$5,000 - 9,999	45		56	
$10,000 or more	42	$\chi^2 = 28.3^*$	64	$\chi^2 = 12.3^*$
Region of Residence				
Pacific and Mountain	35%		56%	
West North Central and East South Central	17		67	
East North Central and West South Central	29		50	
South Atlantic	29		45	
Middle Atlantic and New England	33	$\chi^2 = 7.3^*$	60	$\chi^2 = 10.0^*$
Area of Residence				
Central city	32%		58%	
Suburb	35		51	
Adjacent (beyond suburb- ≤ 50 miles from city)	24		54	
Outlying (beyond suburb- 50+ miles from city)	19	$\chi^2 = 9.3^*$	61	$\chi^2 = 2.4$
Rate Ceiling Environment				
Rate ceiling 18% or less	24%		54%	
Deregulated market or rate ceiling of over 18%	33	$\chi^2 = 4.7^*$	56	$\chi^2 = 0.1$
Prior Experience With Creditor				
Had a previous loan	21%		67%	
No previous loan	38	$\chi^2 = 15.6^*$	42	$\chi^2 = 26.0^*$
Rejection Experience				
Turned down for credit in past few years	13%		46%	
No rejection in recent years	31	$\chi^2 = 8.8^*$	56	$\chi^2 = 2.2$

[a]Percent of 483 respondents who shopped before obtaining credit; the remaining 49 of the 532 borrowers did not respond to the search question.

[b]Percent of 443 respondents who had borrowed from conventional "low-rate" credit sources; 27 borrowers did not reveal the source; 62 borrowed from unconventional sources. The percent who had borrowed from "high-rate" creditors is 100 minus the figure reported here.

*Significant at 95 percent level of confidence.

to shop, but a greater proportion of them borrowed from "high-rate" creditors--retailers in most cases.

Credit shopping increased with the amount of liquid assets owned. If a consumer holds assets which can be easily liquidated to make a purchase, it is more likely that he or she will shop for a lower loan rate in order to justify borrowing. The data may reflect opportunities available in the early 1980s for earning a higher after-tax rate of return on liquid assets than the after-tax cost of credit, particularly since the amount of liquid assets owned did not significantly affect the consumer's source of credit.

Consumers with higher ratios of outstanding instalment debt to income (debt burden) were also more likely to shop credit terms, possibly being more concerned about debt service (interest payments). Similarly, except for very large instalment loans, which are likely to be customized, the probability that the consumer shopped increased with the amount borrowed. The benefit derived from search, in the form of interest savings from a lower interest rate, increases in value as the loan amount increases. Only 13 percent of consumers borrowing under $1,000 shopped for their loan agreement. Further, about two-thirds of these small loan customers borrowed from "high-rate" creditors. Of those consumers borrowing $5,000 or more, 44 percent shopped, and only 42 percent borrowed from "high-rate" creditors.

In an examination of consumer behavior across regions, credit shopping was more prevalent in the West (Mountain and Pacific states) and the Northeast (New England and Middle Atlantic states), and less so in the West

North Central and East South Central regions.[8] These differences may be due to variation in the socioeconomic characteristics of the borrowers across the regions. Another reason for differences in shopping behavior may be regional variation in branching and bank holding company laws. At the time of the study, the Western and Northeastern regions of the U.S. allowed more widespread bank branching, relative to the Midwestern section, possibly providing greater opportunities for consumers to comparison shop.

Consumers living in or near a central city were more likely to shop than those living farther outside a city but there was insignificant variation in the source of credit for consumers in different areas. Fewer conventional credit sources are available in rural areas and it is likely that these consumers were served mainly by smaller banks or branches of larger banks from outside of the area.[9] But, the "high/low" classification of creditors ignores the variation in interest rates offered by a particular type of creditor. It is possible that, on average, commercial bank loan rates in rural areas were higher than those charged in metropolitan areas. Thus, we cannot claim that rural nonshoppers were paying interest rates similar to those paid by nonshoppers residing in more populated and more highly competitive areas.

Search theory suggests that the extent to which consumers shop is positively correlated with the dispersion in prices of the commodity. In

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[8]Because of few observations in the sample from several of the nine U.S. census regions, those regions similar in both typical shopping behavior and credit source were combined.

[9]Borrowing for farm business operation is not included in this analysis.

the market for consumer credit, the removal of usury ceilings should thus increase borrowers' propensity to shop. The effect of usury ceilings on credit shopping was measured with the classification of consumers by the rate ceiling environment of their local credit market.[10] Consumers were more likely to shop in the less restricted states, possibly recognizing that in a deregulated market there was greater variability in loan prices. But, contrary to the findings reported by Peterson and Black, consumers in the more restricted states were not more likely to borrow from high-cost sources--retailers who maintained expected returns under binding rate ceilings by increasing product prices. This may be because ceilings in the later period were not low enough to significantly reduce credit availability at financial institutions.

In accordance with Urbany's propositions, the results of this analysis indicated that once a consumer borrowed from a creditor, he or she was less likely to look for a different source the next time the need for credit arose. Two-thirds of return borrowers had been served by "low-rate" creditors, suggesting that the price and service were such that the potential gains from additional search were outweighed by lack of familiarity, increased paperwork, and the time expended in the search process. Borrowers who did not have prior experience with the creditor were both more likely to shop and were more likely to use a "high-rate" source.

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[10]By 1983, many state legislatures raised or removed consumer credit ceilings. Those states which were still limiting the rate that could be charged to 18 percent or below were: AR, FL, IA, KY, LA, MA, ME, MI, MN, MO, NC, PA, TX, WA, WV, AK, CT, HI, ND, and VT. Observations from the last five were not obtained in the sample of recent borrowers.

Individuals learn about creditors not only through association as customers but also through experience with rejection. Few borrowers who had been rejected for a loan in the past few years, or were unable to borrow as much as they would have liked, shopped for credit. Their subsequent failure to shop was likely due to perceived high costs from embarrassment and fear of rejection. These consumers simply went to a source where they were more certain of obtaining credit, in many cases the seller of the merchandise being acquired.

3. Multivariate Analysis of Search Behavior

To determine which factors were most directly linked with differences in consumer search behavior, binary logit analysis was performed on a borrower's propensity to search for credit and creditor information and on the likelihood of being served by a "low-rate" creditor. As documented in McFadden (1974), this framework is derived from a random utility model of consumer behavior. The nonstochastic component of utility is assumed to be linear in the parameters, and the random component denotes attributes of the environment and/or consumer which are not observed or cannot be measured. In particular, loyalty to a creditor or prior knowledge about the distribution of prices in the credit market--factors not strongly captured in the survey--may be a part of this random unmeasured component.

To test the overall fit of the models, a likelihood ratio statistic and a pseudo R^2 are derived. The likelihood ratio is distributed $\chi^2(r)$, where r equals the number of parameters and is similar to the F test in ordinary regression analysis. As reported in Table 5, the null hypothesis

that all coefficients are zero is rejected at the 95 percent level of confidence for each equation. The pseudo R^2, adjusted for degrees of freedom, also similar to the statistic derived in ordinary regression analysis, ranges between zero and one. Within this range, a larger value indicates better model fit, but because of the probabilistic nature of the predicted values, the upper limit of this statistic is much less than one. Another measure of the model's explanatory power is the proportion of observations correctly predicted.

In one equation, the dependent variable took the value of one if the borrower shopped for credit terms, and zero otherwise. The most common group remained in the constant for the dummy variables derived from the stage in life and education of the household head; that is, married couples under 45 years of age and persons with a high school education.[11] The analysis indicated that, holding other factors constant, single parents were significantly less likely to shop for credit and highly educated consumers were more likely to shop, compared to the omitted group. The propensity to shop was significantly lower for borrowers who had prior loan experience with the creditor and those who had been rejected for credit in the past, but increased with the household debt burden. Region of residence, liquid asset holdings, income, the amount borrowed, residing in a rural area, and an 18 percent rate ceiling in the local credit market had

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[11] Although several variables were correlated (income and education, for example), including them all did not significantly affect the estimated results.

Table 5

Determinants of Consumer Credit Shopping Behavior and Credit Sources

Dependent Variable	Credit Shop	Low-Rate Credit Source
Mean value	.30	.57
Independent Variables		
Life cycle of household head		
Single, <45, no children	0.2 (0.54)	-0.3 (0.74)
Single parent any age	-1.1* (1.95)	-1.1* (2.40)
≥45 and working	-0.4 (1.22)	-0.2 (0.61)
≥45 and retired (or not in labor force)	-0.6 (0.84)	0.2 (0.34)
Education of household head		
Some high school or less	-0.5 (1.07)	-0.9* (2.29)
Some college	0.5 (1.33)	0.01 (0.02)
College degree or more	1.2* (3.58)	-0.5 (1.55)
Liquid asset holdings ($000s)	0.02 (1.32)	not in equation
Household pre-tax income ($000s)	0.001 (0.20)	-0.01 (1.32)
Amount of loan	0.00002 (0.93)	0.0001* (2.57)
Household debt burden	0.02* (3.07)	-0.01* (2.15)
Previous loan with creditor	-0.7* (2.73)	1.1* (4.52)
Rejection experience	-1.4* (2.61)	-0.1 (0.39)
Low rate ceiling	-0.1 (0.45)	-0.1 (0.50)
Reside in rural area	0.03 (0.09)	0.2 (0.47)
Region of residence		
W.N. and E.S. Central	-0.7 (1.62)	0.6 (1.51)
South Atlantic	not in equation	-0.6* (1.83)
number of observations	388	357
likelihood ratio statistic	147.0*	70.1*
pseudo R^2 (adjusted)	0.24	0.10
correctly predicted	74%	69%

*Significant at 95 percent level of confidence, one-tailed test; absolute value of asympototic t-statistics are in parentheses.

no significant impact on consumer shopping behavior, when all other factors were held constant.

For the other equation, the dependent variable took the value of one if the borrower was served by a "low-rate" creditor and zero otherwise. Compared to the omitted groups and holding all else constant, single parents and consumers with little education were significantly more likely to borrow from "high-rate" sources of credit. The smaller the loan, the more likely the consumer borrowed from a "high-rate" credit source. And, while the propensity to shop grew with the consumer's debt burden, the likelihood of borrowing from a "low-rate" credit source declined. Customers of commercial banks, thrifts, and credit unions ("low-rate" creditors) were significantly more likely to be return borrowers than those of retailers and dealers (the major components of the "high-rate" category). Rejection experience, household income, an interest rate ceiling in the local credit market, and residing in a rural area had no significant impact on the source of credit. Borrowers residing in the South Atlantic states were significantly less likely to use conventional "low-rate" sources of credit than those living elsewhere.

C. Methods of Search

The method of search was examined for consumers who indicated that they had tried to obtain information on creditors and credit terms (Table 6). In 1977 Durkin and Elliehausen found that 51 percent of shoppers had contacted creditors of a different type than they eventually borrowed from. This proportion rose to 80 percent in 1983, a good indication of increased

competition among creditors and effective marketing to attract new customers. Only 15 percent of shoppers in 1983 contacted different creditors of the same type that they borrowed from, down from 32 percent in 1977. These results may indicate that more consumers had come to believe that credit terms were less varied within a class of creditors, as compared to among classes.

IV. Implications for Current Market Developments

A. The Market for Revolving Credit

In the univariate analysis, consumers were significantly less likely to shop when the amount of the loan was small. Further, multivariate analysis, holding all other factors constant, suggested that the smaller the loan the more likely the borrower obtained higher-rate credit arranged by dealers or retailers.

Although these analyses were limited to closed-end credit, there may be implications for search practices on open-end credit card plans. Such plans typically feature repeat business by consumers who borrow against pre-established lines of credit. Under these plans, the incentive to shop for the most attractive terms may be limited by the small amount and the short effective term of the credit. Given the cost of seeking information, the transactions cost of switching cards, and the minimal differences in finance charges, the perceived net benefit of credit shopping may be negative. This information about consumer behavior supports the effectiveness of the nonrate related ways in which credit card issuers

Table 6

Methods of Search

Method	Those Using[a] This Method	Those Who Borrowed From[b] Low-Rate Creditors
Shopped at other creditors of the same type as borrowed from	15%	62%
Shopped at other creditors of different type than borrowed from	80	45
Other (talked with friends, neighbors, consulted media); includes vague responses like "phoned places" and "looked around"	21	54

[a]For the 138 borrowers who shopped for credit the percent using each method. Because they were allowed two responses, percentages add to more than 100.

[b]For shoppers employing each method, the percent who borrowed from a conventional "low-rate" credit source.

compete. Similar to providers of smaller closed-end loans, they emphasize automatic travel insurance, card protection, merchandise and travel discounts, and a myriad of other benefits to attract new customers.

According to fundamental search theory, as noted earlier, the quantity of credit shopping should be inversely related to its cost. A reduction in the opportunity cost of seeking and interpreting information implies that a smaller difference in interest rates is needed to yield a positive net benefit to search. In 1986, Wisconsin and California passed laws which changed disclosure requirements on credit cards and related plans. Under the new legislation, more complete information on terms of these credit instruments must be disclosed at the time of solicitation rather than before the first transaction is made under the plan--currently the typical rule. Other states and the U.S. Congress have proposed similar legislation. Such disclosure should reduce search costs and increase the amount of comparison shopping for this form of credit.[12]

B. Tax Reform and Credit Shopping

There is some evidence that the Tax Reform Act of 1986 will have a significant, albeit gradual, impact on the amount of credit consumers use and on their credit shopping behavior. In analysis of consumer debt use, Sullivan and Worden (1986) found that a large portion of the growth in consumer credit use over the past decade can be attributed to higher income

[12]Worden and Fisher (1987) discuss the possible affects of disclosure regulation on consumers' shopping for credit cards. A recent survey of cardholders provides the data for their analysis.

households. Not only is this group of consumers more likely to use consumer credit, but it incurs a higher proportion of total outstandings. The analysis also suggests that the propensity to deduct interest for tax purposes (a household took more than the standard deduction) was positively correlated with the propensity to use consumer credit and the amount of leverage in a household's portfolio (the ratio of outstandings to household income).

Based on these results, and other statistics from the Internal Revenue Service, Sullivan (1986) discusses the possible impact of the Tax Reform Act on consumer borrowing. Even with lower marginal tax rates, the after-tax cost of consumer credit will increase significantly with the loss of the interest expense deduction. And, assuming their use of consumer credit has not changed over the past few years, high-income households will incur the greatest rise in costs.

In the present analysis of shopping behavior, consumers with higher incomes and larger liquid asset holdings were shown to have a higher propensity to shop for credit terms. Given the tax reform rulings and assuming that the behavior observed in 1983 has not changed dramatically, these consumers will now have an even greater incentive to shop for lower rate sources of credit.

C. Low-Rate Incentive Campaigns From Automobile Finance Companies

The primary objective of most credit shopping is to seek the lowest interest rate. This is consistent with the broad success of the aggressive lending practices by financial affiliates of the major automobile

manufacturers. It might be argued that this kind of rate competition would increase market efficiency by bidding the price of credit down to its "true" value. But, as recently suggested in the media, the effective finance charge for such contracts is difficult to calculate if the alternative of a cash rebate is offered.[13] Instead of calling for state legislation against these low-rate incentive campaigns, another approach is the education of consumers in finance valuation techniques. Whereas market efficiency is inhibited by restrictive regulation, it is promoted by the clarification of the costs of credit.

D. Increasing Competition in Financial Services

A greater percentage of the borrowers in 1983 who shopped for credit obtained information about a variety of types of creditors than did shoppers in previous years. This is evidence of increasing and effective competition among providers of consumer credit.

Consumers with prior borrowing experience were less likely to shop for credit terms. Even if the costs of search are reduced, it is possible that either loyalty or prior knowledge of the distribution of prices will inhibit a significant increase in credit shopping for these consumers. Borrowers who do not have extensive credit experience would be the most likely to take advantage of new credit products and providers, and make use of a greater dissemination of credit price information.

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[13] "Rebate or Loan: Car Buyers Need To Do the Math," Wall Street Journal, 10 October 1986.

Initial analysis of the 1983 data found that young consumers (and those with a greater amount of human capital) were more likely to credit shop. Their behavior indicated an interest in competitive pricing that was also evident in the results of a recent survey by the American Banker.[14] In that study, consumers 35 years of age and under, and with increasing earnings potential, were more likely to shop at nonbanking firms for banking services. Not particularly attached to conventional creditors, this group of young professionals is attracted to the new products and expanded services of diversified financial giants. The survey found a similar attitude among two-earner households, another group whose proportion in the population is growing.

In response to competition, management at conventional creditors is increasing its emphasis on marketing financial services. To strengthen customer ties, relationship pricing is being developed, with the price of one product dependent on the purchase of another. Although this practice increases the cost of comparison shopping for credit, it tightens the creditor's relationship with former borrowers, who, according to this analysis, were less inclined to shop anyway.

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[14] "How Consumer America Views the Changing Financial Services Industry," conducted in June 1986. See Laura Gross, "Diversified Financial Giants Gaining Consumer Approval," American Banker, 24 September 1986.

V. Nonshoppers and Market Efficiency

Current trends in the consumer credit market--reduced constraints on providers of credit, technological advances in evaluating credit risk, and better dissemination of rate information--can promote more efficient pricing of credit. This analysis indicated that some, but not all, consumers will reap the benefits of these changes by comparison shopping for credit. Borrowers may choose not to shop for credit terms because they perceive that the benefits from doing so are exceeded by the costs incurred.

The question is whether these nonshoppers are being inefficiently served by the market and pay higher prices for similar credit contracts than shoppers of the same credit risk. Consumers with established relationships, particularly at "low-rate" creditors, are likely to perceive no net gain from seeking a lower interest rate. Their nonshopping behavior does not imply market inefficiency. Further, consumers who shopped for credit did not necessarily pay a lower price. Some consumers (highly educated and with high levels of income) had large debt burdens and so were more interested in finding an affordable monthly payment. They borrowed from retailers and dealers.

Less educated borrowers and those with lower incomes had a lower propensity for shopping, as did individuals who had been rejected for credit in the past. Similar results were indicated for single parents--in this sample typically a woman with lower income, few assets, and a past record of credit rejection. These borrowers may have perceived net costs

to shopping because they realized higher default risk and believed that they were unlikely to qualify for lower-rate credit. In this case, these nonshoppers were not being inefficiently served by the credit market.

Other factors concerning these nonshoppers may indicate a policy issue, though. Consumers were asked if they had ever considered applying for credit at a particular place but did not for fear of being rejected. One-third of the single parents in the sample responded positively to this question, significantly more than other consumers their age. Seventeen percent of consumers in the lowest income group responded positively, again significantly more than consumers in other income groups.

It may be argued that these consumers recognized a lack of creditworthiness. Over one-half of each group (single parents and lowest income quintile) said that insufficient ability to repay was the likely reason they would be rejected; one-third believed the reason was a poor credit history or the lack of one. But the source of their perceptions should be noted. For each of these groups, 35 to 40 percent claimed that their information came directly from the creditor. These consumers did not apply for credit, but perceived rejection nonetheless. Dissuasion from formal application is a public policy issue. The credit market cannot work efficiently if consumers are not given an opportunity to have their credit worthiness formally and completely evaluated.

V. Summary

This analysis of the credit shopping behavior of households provides evidence that such behavior is systematically related to consumers' perceived costs and benefits of such activities. These costs and benefits do change over time as technology, the availability of information, competition and available credit products change. But a consumer's perception of credit shopping is heavily influenced by his or her experiences at borrowing. Defunct regulations that in effect discouraged shopping, previous credit rejections, discriminatory screening practices, or early positive experience with "high-rate" creditors influence the credit shopping practices of borrowers. Given the borrower's current condition, actual creditor choices may thus look suboptimal. The education of borrowers about available alternatives and regulations that require full disclosure of credit terms and encourage price competition among creditors for all risk classes of borrowers appear to be the optimal public policy variables that will aid the development of more efficient consumer credit markets.[15]

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[15]An example of one state's response to these issues is Massachusetts Banking Commission's "Shopper's Credit Guide." This guide, printed monthly in newspapers, lists annual percentage rates of interest by individual financial institutions in several major cities for a variety of credit contracts. Also, in response to the Truth in Lending Simplification and Reform Act (1980), the Federal Reserve Board began an investigation of the effectiveness of similar shoppers' guides.

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